

TEACHERS' PRACTICES AND NUMBER SENSE DEVELOPMENT IN ELEMENTARY SCHOOL

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In the context of a collaborative setting a study was carried out on primary school teachers' practices when teaching the topic Numbers and Operations. This Poster presents the results of two case studies, underlying teachers' decisions and the challenges they face when they prepare and propose tasks that aim to students' number sense development.

Number sense development demands approaches to number and operations teaching quite different from the traditional one, based on the use of algorithms (Yang, 2003). These ideas challenge primary school teachers' practices as they must be able to help students to reason and to use appropriate computation methods (Yang, 2003). To achieve these objectives it is important that they reflect on the nature of the mathematical tasks they propose and on their potentialities to develop student's understanding, on the different strategies students can use (Stein, Smith, Henningsen, & Silver, 2009), on the meaning they can give to the contexts, and how students can mentally manipulate the numbers presented in the task (Fosnot & Dolk, 2001). It is also important that teachers develop classroom practices that promote students' reflection about their own strategies and the other students' strategies (Stein et al., 2009).

The first author of this proposal conducted a study in the context of one collaborative setting that involved two primary teachers. Its main goal is to describe and analyze practices undertaken by the two teachers concerning the selection/design, preparation and exploration of tasks oriented to the development of students' number sense. This study adopts a case study design where data was collected from four semi-structured interviews and audio recordings and notes from 30 collaborative working sessions (teachers and researcher) and from teachers' classrooms (26 observed lessons).

In this poster we will present the two case studies results, focusing on the aspects valued by the teachers, the challenges they face, and their concerns in relation to several aspects of number sense when they prepare and propose the tasks that promote number sense development. The findings show that the development of mathematical reasoning and more specifically mental computation have become teachers' major concerns when they select/design the tasks. During the tasks' exploration in the classroom it is evident the teachers' increasing concern with the understanding of the students' strategies however the understanding of their reasoning becomes the teachers' main challenge. The value attributed to the selection of the strategies and its sequencing stands out in the discussion of the tasks, which are also important challenges for these teachers.

Additional information

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